

REC'D 15 MAY 2001

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| | | |
|--|---|---|
| Applicant's or agent's file reference 7942/JB | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/US00/03229 | International filing date (day/month/year) 08/02/2000 | Priority date (day/month/year) 08/02/1999 |
| International Patent Classification (IPC) or national classification and IPC C11D3/386 | | |
| Applicant THE PROCTER & GAMBLE COMPANY et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 8 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

| | |
|---|---|
| Date of submission of the demand 17/07/2000 | Date of completion of this report 11.05.2001 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized officer Pfannenstein, H Telephone No. +49 89 2399 8217 |



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US00/03229

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-20 as originally filed

Claims, No.:

1-10 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US00/03229

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☐ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|------|--------|------|
| Novelty (N) | Yes: | Claims | |
| | No: | Claims | 1-10 |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-10 |
| Industrial applicability (IA) | Yes: | Claims | 1-10 |
| | No: | Claims | |

**INTERNATIONAL PRELIMINARY
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2. Citations and explanations
see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item III

There are two separate groups of invention:

- (A) claims 1-4,8-10
- (B) claims 5-7.

A and B relate to liquid manual dishwashing compositions comprising amylase are known, see point VIII. They are, therefore, not so linked as to form a single general inventive concept (Rule 13.1 PCT)

(A) relates to compositions comprising amylase and a suds booster, they are substantially free of H₂O₂ or chelants having a log K >3.

(B) relates to a process for making compositions comprising detergent ingredients, amylase and an antioxidant, they are substantially free of H₂O₂.

Thus the application relates to two different manual liquid dishwashing compositions.

Re Item V

- 1) WO-A-9732961 (example 16) and WO-A-9901531 (example 6) exemplify liquid manual dishwashing compositions comprising amylase, suds booster and grease removal agents (Mg²⁺, surfactant, ethanol). 0-200 ppm H₂O₂ and 0-0,1% citrate can be present. Thus the subject-matter of claims 1-4,8-10 is not novel (Article 33(2) PCT).

WO-A-9828393 (examples 1E,F, 2F,H,J), cited in the application, exemplifies liquid manual dishwashing compositions comprising amylase, suds booster and grease removal agents (diamine, surfactant). No H₂O₂ and chelants are present. Thus the subject-matter of claims 1-2,4,8-10 is not novel.

WO-A-9414941 (example) exemplify liquid manual dishwashing compositions comprising amylase, suds booster and grease removal agents (surfactants, butylene glycol). H₂O₂ and chelants are not present. Thus the subject-matter of claims 1-2,4,8-10 is not novel.

**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/US00/03229

- 2) EP-A-95205 (example II in combination with page 13, l.6-14) describes a process for making liquid compositions whereby the compounds, including amine oxide surfactant, ethanol amines and citric acid, are continuously added and mixed, the last added ingredient is amylase. Ethanol amines and citric acid are antioxidants. Said composition is free of H₂O₂ and appears to be suitable for manual dishwashing. A brightener is mentioned at line 30 of page 12 but in the ingredient list (100%) it is not listed, thus the composition does not comprise brightener (in the present application brightener is listed at page 17). Thus the subject-matter of claims 5-7 is not novel.

It is general knowledge that enzymes are attacked by peroxides such as H₂O₂. The use of antioxidants for stabilization of enzymes is also known, see e.g. US-A-4462922 (col.1, claim 1). Thus a skilled person would arrive at least at claim 5.

It is also known that amine oxides are stabilized by antioxidants, see JP-A-56083465 (WPI abstract). These stabilized amine are used in detergent compositions which may also comprise amylase as e.g. in US-A-4462922. Thus a skilled person would arrive at claims 5-7.

Re Item VI

Certain published documents (Rule 70.10)

Application No

Patent No Publication date

(day/month/year) Filing date

(day/month/year) Priority date (valid claim)

(day/month/year)

WO-9927054

3.6.99

20.11.98

21.11.97

WO (tables II, IV, V) describes the subject-matter of claims 1,2,4,8-9.

Re Item VII

- 1) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the above cited documents are not mentioned in the description, nor

are these documents identified therein.

- 2) The application and serial numbers on pages 3,5,8,10,14-16,18 should be substituted by the publication numbers.

Re Item VIII

- 1) Claim 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. By the terms greasy soil removal and suds booster the claim attempts to define the subject-matter in terms of the result to be achieved which merely amounts to a statement. The technical features necessary for achieving this result should be added (e.g. pages 11, 13, 15).
- 2) The term "substantially no " used in claims 5, 7 is vague and indefinite and as such renders the scope of the claims unclear; accordingly, it should be substituted by a more precise term from the description, see page 6, I.29-30

In claims 1, 2, 8, 9 the term "substantially free" is vague and indefinite and as such renders the scope of the claim unclear; accordingly it should be deleted, see pages 16, 6, 7.

- 3) The term detergent ingredient characterized by H₂O₂ in claim 5 is inconsistent with the term substantially no H₂O₂ in the same claim.

Moreover, the only detergent ingredient appears to be amine oxide. Hence, claim 5 appears not supported by the description.

- 4) The term suds booster in claim 1 is not vague. According to page 15 it is a suds stabilizing surfactant or suds stabilizer.
- 5) It is clear from page 8 that the 5-90% surfactant should be present. Since independent claims 1 and 5 do not contain this feature they do not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential

**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/US00/03229

to the definition of the invention.

- 6) Claim 7 comprises all the features of claim 5 and is therefore not appropriately formulated as a claim dependent on the latter (Rule 6.4 PCT).
- 7) Claims 8 and 10 are incomplete.

Claim 3 cannot relate to claim 2.

Claims 8-10 (composition) cannot at present be dependent on claims 5-7 (process).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|---|--|--|
| Applicant's or agent's file reference 7942/JB | FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small> | |
| International application No. PCT/US 00/ 03229 | International filing date (day/month/year) 08/02/2000 | (Earliest) Priority Date (day/month/year) 08/02/1999 |
| Applicant THE PROCTER & GAMBLE COMPANY et al. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 00/03229

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

Liquid dishwashing detergent composition containing one or more amylase enzymes which exhibits excellent starch-based soil removal performance and is devoid of certain amylase enzyme-destabilizing components such as hydrogen peroxide and chelants having a Log K of greater than about 1.5.

INTERNATIONAL SEARCH REPORT

International Application No

P US 00/03229

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C11D3/386 C11D11/00 C11D1/75

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | WO 97 32961 A (PROCTER & GAMBLE) 12 September 1997 (1997-09-12) example 16 --- | 1-4, 8-10 |
| X | WO 99 01531 A (PROCTER & GAMBLE) 14 January 1999 (1999-01-14) example 6 --- | 1-4, 8-10 |
| X | WO 98 28393 A (PROCTER & GAMBLE) 2 July 1998 (1998-07-02) cited in the application examples 1,2 --- | 1, 2, 4, 8-10 |
| X | WO 94 14941 A (BEROL NOBEL AB) 7 July 1994 (1994-07-07) examples --- | 1, 2, 4, 8-10 |
| | --- -/-- | |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

7 June 2000

Date of mailing of the international search report

19/06/2000

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INTERNATIONAL SEARCH REPORT

International Application No

US 00/03229

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | EP 0 095 205 A (PROCTER & GAMBLE) 30 November 1983 (1983-11-30) example II --- | 5-7 |
| A | US 4 462 922 A (BOSKAMP JELLES V) 31 July 1984 (1984-07-31) column 1; claims --- | 5 |
| A | DATABASE WPI Section Ch, Week 198134 Derwent Publications Ltd., London, GB; Class E19, AN 1981-61390D XP002139635 & JP 56 083465 A (NIPPON OILS & FATS CO LTD), 8 July 1981 (1981-07-08) abstract --- | 5-7 |
| P, X | WO 99 27054 A (PROCTER & GAMBLE) 3 June 1999 (1999-06-03) tables II, IV, V ----- | 1, 2, 4, 8-10 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

P US 00/03229

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|---|--|
| WO 9732961 | A | 12-09-1997 | BR 9707951 A CA 2247501 A CN 1217742 A EP 0885285 A | 27-07-1999 12-09-1997 26-05-1999 23-12-1998 |
| WO 9901531 | A | 14-01-1999 | AU 3719297 A EP 0994936 A | 25-01-1999 26-04-2000 |
| WO 9828393 | A | 02-07-1998 | US 5990065 A AU 5379598 A EP 0946703 A PL 334376 A | 23-11-1999 17-07-1998 06-10-1999 28-02-2000 |
| WO 9414941 | A | 07-07-1994 | SE 9203818 A | 19-06-1994 |
| EP 0095205 | A | 30-11-1983 | AT 22920 T AU 559791 B AU 1488883 A CA 1208519 A DE 3366958 D FI 831832 A, B, GR 78820 A IE 55427 B JP 1785137 C JP 4077038 B JP 59025894 A MX 162610 A US 4561998 A | 15-11-1986 19-03-1987 01-12-1983 29-07-1986 20-11-1986 25-11-1983 02-10-1984 12-09-1990 31-08-1993 07-12-1992 09-02-1984 31-05-1991 31-12-1985 |
| US 4462922 | A | 31-07-1984 | AR 228215 A AU 555411 B AU 9046682 A BR 8206658 A CA 1190494 A DE 3272362 D EP 0080223 A JP 1350556 C JP 58091800 A JP 61016796 B NZ 202484 A PH 18253 A ZA 8208331 A | 31-01-1983 25-09-1986 26-05-1983 04-10-1983 16-07-1985 04-09-1986 01-06-1983 28-11-1986 31-05-1983 02-05-1986 31-05-1985 13-05-1985 27-06-1984 |
| JP 56083465 | A | 08-07-1981 | NONE | |
| WO 9927054 | A | 03-06-1999 | NONE | |